

Preventive maintenance for ACS503 AC drives

ABB recommends regular preventive maintenance for AC drives throughout their lifetime to ensure maximum availability and minimum unplanned repair costs.

Preventive maintenance aims for increased reliability and extended lifetime by timely performed appropriate service. Preventive maintenance consists of annual system inspections and component replacements according to the product specific maintenance schedule.



Drives preventive maintenance is based on ABB's extensive knowledge and experience of manufacturing and maintaining AC drives for more than 30 years and is taking environmental and operational conditions into account. Qualified and certified drives specialists perform on-site preventive maintenance work.

Benefits

- Increased drive reliability
- Optimized maintenance costs and minimized repair costs
- Easy-to-plan maintenance budget
- Extended drive lifetime
- Genuine, factory-certified ABB parts

Service provides

Preventive maintenance service includes labor and service parts to perform on-site maintenance work according to the maintenance schedule:

- Visual inspection of the electrical drive and its environmental conditions
- Inspection of the connections
- Inspection of the ribbon cables
- Functional inspection of the fan and cooling system
- ESD protected cleaning of the drive
- Inspection of the emergency stop-circuit
- Inspection of the fault logger
- Inspection and storage of the parameters
- Functional testing of the drive under normal conditions
- Basic measurements with supply voltage
- Inspection of drive spare part inventory
- Reforming of spare module capacitors

A detailed service report including recommendations for future actions is provided once the maintenance work has been completed and inspection data fully analyzed.

Ready-made preventive maintenance kits are available at www.abb.com/partsonline for component replacements marked "R" on the maintenance schedule.

Preparations before preventive maintenance

Successfulness of the preventive maintenance depends on information recorded on the service reports provided by the system owner. Usually the benefit of preventive maintenance increases when the information provided is as thorough as possible. If the available information is not sufficient, it is recommended to perform a site survey for the drive before preventive maintenance.

ABB must have free access to the drive for maintenance during the shutdown as agreed. Preventive maintenance must be planned well in advance in order to reserve resources and service parts needed.

- Product Lifecycle Services
- Installation & Commissioning
 - Training
 - Support & Remote Services
 - Spare Parts & Repairs
 - Maintenance & Field Services
 - Migration & Retrofits
 - Optimization





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Service notes

Maintenance schedule

There is still a commonly held belief that industrial products equipped with electronic components do not require specific maintenance. Based on ABB's experience, however, failure probability of such equipment increases after years of operation. For electric drives this period is typically 5 to 10 years. The main reason for failures is aging of components, but it is also highly affected by operational conditions. A component failure may cause consequential damage to other parts of the drive including power semiconductors.

A maintenance schedule provides a systematic and functional means of maintaining a specific drive type. It is based on extensive experi-

ence and knowledge of manufacturing and maintaining electric drives. Specifications of component suppliers are observed carefully.

The environmental and operational conditions of the drive are also considered. Demanding environment, such as high ambient temperature, humidity, dirtiness or heavy load, can measurably shorten the component lifetime and also the maintenance and component replacement intervals.

ABB recommends an annual inspection in addition to regular maintenance to be carried out to ensure optimum drive performance through its entire lifetime.

	Years from start-up																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Start-up	P																				
Cooling																					
➢ Cooling fan	I	I	I	R	I	I	I	R	I	I	I	R	I	I	I	R	I	I	I	R	I
Aging																					
➢ Electrolytic capacitors (DC circuit)											(R)		R								(R)
➢ Electrolytic capacitors (SNAT 7261 INT)											(R)		R								(R)
Connections & Surroundings																					
➢ Ribbon cables (connections)							I					I					I				I
➢ Tightness of IGBT modules (3Nm)							I					I					I				I
➢ Tightness of terminals							I					I					I				I
➢ Dustiness, corrosion and temperature		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Quality of supply voltage		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Improvements																					
➢ SW/HW upgrade		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
➢ Based on product notes		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Measurements																					
➢ Basic measurements with supply voltage		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Spare Parts																					
➢ Spare Parts		I	P	I	P	I	P	I	P	I	P	I	P	I	P	I	P	I	P	I	P

Legend:
 R = Replacement of component
 I = Inspection (visual inspection, correction and replacement if needed)
 P = Performance of on-site work (commissioning, tests, measurements, etc.)
 (R) = Replacement if high ambient temperature or cyclic heavy duty



ABB Oy
 Product Support
 PO Box 116
 FIN-00381 Helsinki, Finland
 Tel: +358 10 22 11
 Fax: +358 10 22 26800
 www.abb.com/drives
 e-mail: sales.productsupport@fi.abb.com